SCREENING SITE INSPECTION REPORT
FOR
DUPONT E.I. DENEMOURS NORTH BEND
NORTH BEND, OHIO
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TABLE OF CONTENTS

Table of Contents (Cont.)

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

Ecology and Environment, Inc., Field Investigation Team (FIT) was tasked by the United States Environmental Protection Agency (U.S. EPA) to conduct a screening site inspection (SSI) of the DuPont E.I. DeNemours North Bend (DuPont) site under contract number 68-01-7347.

The site was initially identified by the Ohio Environmental Protection Agency (OEPA), Southwest District Office, Dayton, Ohio. The site was discovered in 1974 when DuPont E.I. DeNemours and Company, Inc. (DuPont E.I. DeNemours), responded to the Waste Disposal Site Survey (also known as the Eckhardt Survey), which questioned companies regarding the location of wastes that they had disposed of in the past (U.S. EPA 1987).

The site was evaluated in the form of a preliminary assessment (PA) that was submitted to U.S. EPA. The PA was prepared by Kim McGuire of OEPA and is dated May 14, 1987 (U.S. EPA 1987).

FIT prepared an SSI work plan for the DuPont site under technical directive document (TDD) F05-8707-106, issued on July 22, 1987. The SSI work plan was approved by U.S. EPA on October 8, 1990. The SSI of the DuPont site was conducted on November 6, 1990, under TDD F05-9009-010, issued on August 29, 1990.

The FIT SSI included an interview with site representatives, a reconnaissance inspection of the site, and the collection of nine soil/sediment samples and three production well samples.

The purposes of an SSI have been stated by U.S. EPA in a directive outlining Pre-Remedial Program strategies. The directive states:

> All sites will receive a screening SI to 1) collect additional data beyond the PA to enable a more refined preliminary HRS [Hazard Ranking System] score, 2) establish priorities among sites most likely to qualify for the NPL [National Priorities List], and 3) identify the most critical data requirements for the listing SI step. A screening SI will not have rigorous data quality objectives (DQOs). Based on the refined preliminary HRS score and other technical judgement factors, the site will then either be designated as NFRAP [no further remedial action planned], or carried forward as an NPL listing candidate. A listing SI will not automatically be done on these sites, however. First, they will go through a management evaluation to determine whether they can be addressed by another authority such as RCRA [Resource Conservation and Recovery Act].... Sites that are designated NFRAP or deferred to other statutes are not candidates for a listing SI.
>
> The listing SI will address all the data requirements of the revised HRS using field screening and NPL level DQOs. It may also provide needed data in a format to support remedial investigation work plan development. Only sites that appear to score high enough for listing and that have not been deferred to another authority will receive a listing SI. (U.S. EPA 1988)

U.S. EPA Region V has also instructed FIT to identify sites during the SSI that may require removal action to remediate an immediate human health or environmental threat.

2. SITE BACKGROUND

2.1 INTRODUCTION

This section presents information obtained from SSI work plan preparation, the site representative interview, and the reconnaissance inspection of the site.

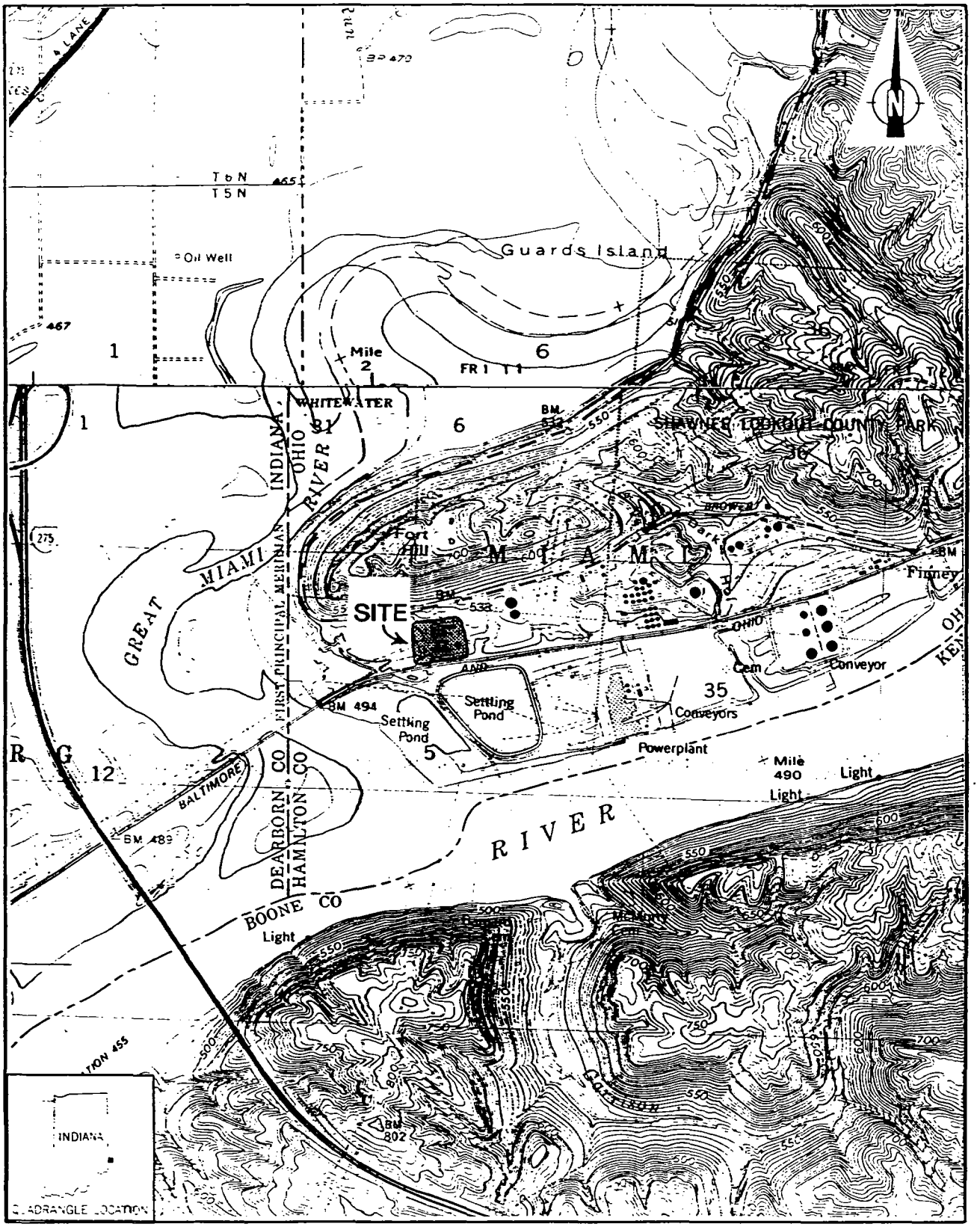
2.2 SITE DESCRIPTION

The DuPont site is an active 20-acre sulfuric acid manufacturing facility. This site, located at 11215 Brower Road, is approximately 1/4 mile northeast of the Great Miami River and approximately 3/8 miles north of the Ohio River in the city of North Bend, Hamilton County, Ohio (E1/2SE1/4NW1/4 sec. 5, T.5N., R.1E.) (see Figure 2-1 for site location). The area surrounding the site is sparsely populated and heavily industrialized. The junction of the Great Miami and the Ohio rivers is approximately 3/8 miles south-southwest of the site. The Indiana-Ohio-Kentucky border is approximately 3/4 miles south-southwest of the site. The overall topography of the site is relatively flat, with areas of higher elevation located to the north and northeast.

A 4-mile radius map of the DuPont site is provided in Appendix A.

2.3 SITE HISTORY

The DuPont site has been owned and operated by DuPont E.I. DeNemours since 1956, when construction of the plant facilities was completed (Morgenthaler 1991a). The previous site owner was West Minster Bronze. It is not known how long West Minster Bronze owned the site, nor how the site was used during that period (Worth 1990).



SOURCE: USGS, Lawrenceburg, IN-KY-OH Quadrangle, 7.5 Minute Series, 1981; Hooven, OH-IN-KY Quadrangle, 7.5 Minute Series, 1954, photorevised 1970.

SCALE
0 0.5 1 MILE

FIGURE 2-1 SITE LOCATION

Since 1956 DuPont E.I. DeNemours has been manufacturing sulfuric acid through a contact process at the DuPont site. In this process, raw sulfur is burned in the air to produce sulfur dioxide. The sulfur dioxide then undergoes oxidation and hydrolysis to produce sulfuric acid. Vanadium pentoxide is used in the reaction as a catalyst (Yust 1990).

DuPont E.I. DeNemours responded to the Waste Disposal Site Survey in approximately 1974. At that time it was reported that vanadium pentoxide waste had been disposed of in an unlined landfill located on-site (U.S. EPA 1987). The landfill was also used for the disposal of nonhazardous wastes from the plant, which included scrap paper and bricks and other construction debris (Morgenthaler 1991). In approximately 1988 DuPont E.I. DeNemours discontinued using the landfill for unknown reasons. The landfill has since been leveled and covered with soil.

Vanadium pentoxide waste is produced on-site approximately once per year when a contractor is hired to clean the catalyst. The cleaning process involves running the vanadium pentoxide catalyst through a shaker that separates the vanadium pentoxide dust and fine particles from the reusable catalyst. The vanadium pentoxide dust and fines are considered to be waste material. It is not known how DuPont E.I. DeNemours disposed of this waste material between approximately 1956 and 1966. Between approximately 1966 and 1980 a contractor would clean the catalyst yearly, and DuPont E.I. DeNemours would drum the vanadium pentoxide dust and fines and sell it to recyclers. Since approximately 1980, the contractor that cleans the catalyst has been returning the vanadium pentoxide dust and fines directly to the manufacturer.

The DuPont site has two outfalls that are permitted by OEPA to discharge under National Pollutant Discharge Elimination System (NPDES) permit number IE00000*AX, which was issued to DuPont E.I. DeNemours on September 25, 1985. The east outfall is used for storm water runoff and the west outfall is used for cooling water, boiler blowdown, and water softener backwash (Brinker 1985). Both of these outfalls discharge into an unnamed ditch, which flows to the west for approximately 1/4 mile before joining with the Great Miami River. The NPDES permit requires the monitoring of the pH of the water in the unnamed ditch, located

south of the site, every two hours throughout the day. These readings are then averaged and recorded at the end of the day, and a monthly report of the measurements is sent to the OEPA Industrial Wastewater Group (Brinker 1985).

No state or federal action is currently taking place at the site.

3. SCREENING SITE INSPECTION PROCEDURES AND FIELD OBSERVATIONS

3.1 INTRODUCTION

This section outlines procedures and observations of the SSI of the DuPont site. Individual subsections address the site representative interview, reconnaissance inspection, and sampling procedures. Rationales for specific FIT activities are also provided. The SSI was conducted in accordance with the U.S. EPA-approved work plan.

The U.S. EPA Potential Hazardous Waste Site Inspection Report (Form 2070-13) for the DuPont site is provided in Appendix B.

3.2 SITE REPRESENTATIVE INTERVIEW

On November 6, 1991, at 9:45 a.m., Casey Lawal, FIT team leader, conducted an interview with Lownnie Wingate, a former employee of DuPont E.I. DeNemours, and three current employees, Christine Trmal, Geological Engineer and Hydrologist; Tobin Lounsbury, Hydrologist; and Dale Yust, Maintenance Superintendent. The interview was conducted on-site in the conference room of the DuPont E.I. DeNemours manufacturing plant. FIT team member Scott Zimmerman was also present. The interview was conducted in order to gather information that would aid FIT in conducting the SSI.

3.3 RECONNAISSANCE INSPECTION

Following the site representative interview, FIT conducted a reconnaissance inspection of the DuPont site and surrounding area in accordance with Ecology and Environment, Inc. (E & E), health and safety guidelines. The reconnaissance inspection began at 11:45 a.m. on

November 6, 1991, and included a walk-through of the site to determine appropriate health and safety requirements for conducting on-site activities and to make observations to aid in characterizing the site. FIT also determined sampling locations during the reconnaissance inspection. FIT was accompanied by Trmal, Lounsbury, and Yust during the reconnaissance inspection.

Reconnaissance Inspection Observations. The DuPont site is a sulfuric acid manufacturing facility located on approximately 20 acres at 11215 Brower Road in North Bend, Ohio. Baltimore and Ohio (B & O) Railroad tracks run along the southern of the site. Shawnee County Lookout Park is located north of the site on the north side of Brower Road. The site is bordered on the west by an undeveloped parcel of land covered with grass, shrubs, and trees, and on the east by a gas and electric company (see Figure 3-1 for site features).

The topography of the site is basically flat with areas of higher elevation located to the north and northwest. The site is located in a heavily industrialized area with few residences within a 2-mile radius of the site.

An access road extends south from Brower Road approximately 200 feet to the on-site office building. The access road then continues around the site and encompasses the production, storage, and loading areas. The sulfuric acid production area is located just south of the office building, and the main sulfur storage tank is located approximately 50 feet south of this area.

A tank farm containing five 2,000-ton sulfuric acid storage tanks is located approximately 170 feet west of the main sulfur storage tank. A truck loading area is located north of the tank field. An underground drainage pipe leads from the tank farm and the loading area to a spill containment pond located approximately 200 feet to the west. The spill containment pond is an earthen, unlined area approximately 50 feet long by 50 feet wide and approximately 8 feet deep.

The inactive landfill area is located in the northwest corner of the site, north of the spill containment pond. The approximately 1-acre area has been leveled and covered with topsoil, but has not been vegetated. At the time of the SSI, FIT observed a pile of raw sulfur, approximately 4 feet high and 6 feet in diameter, located on top of the

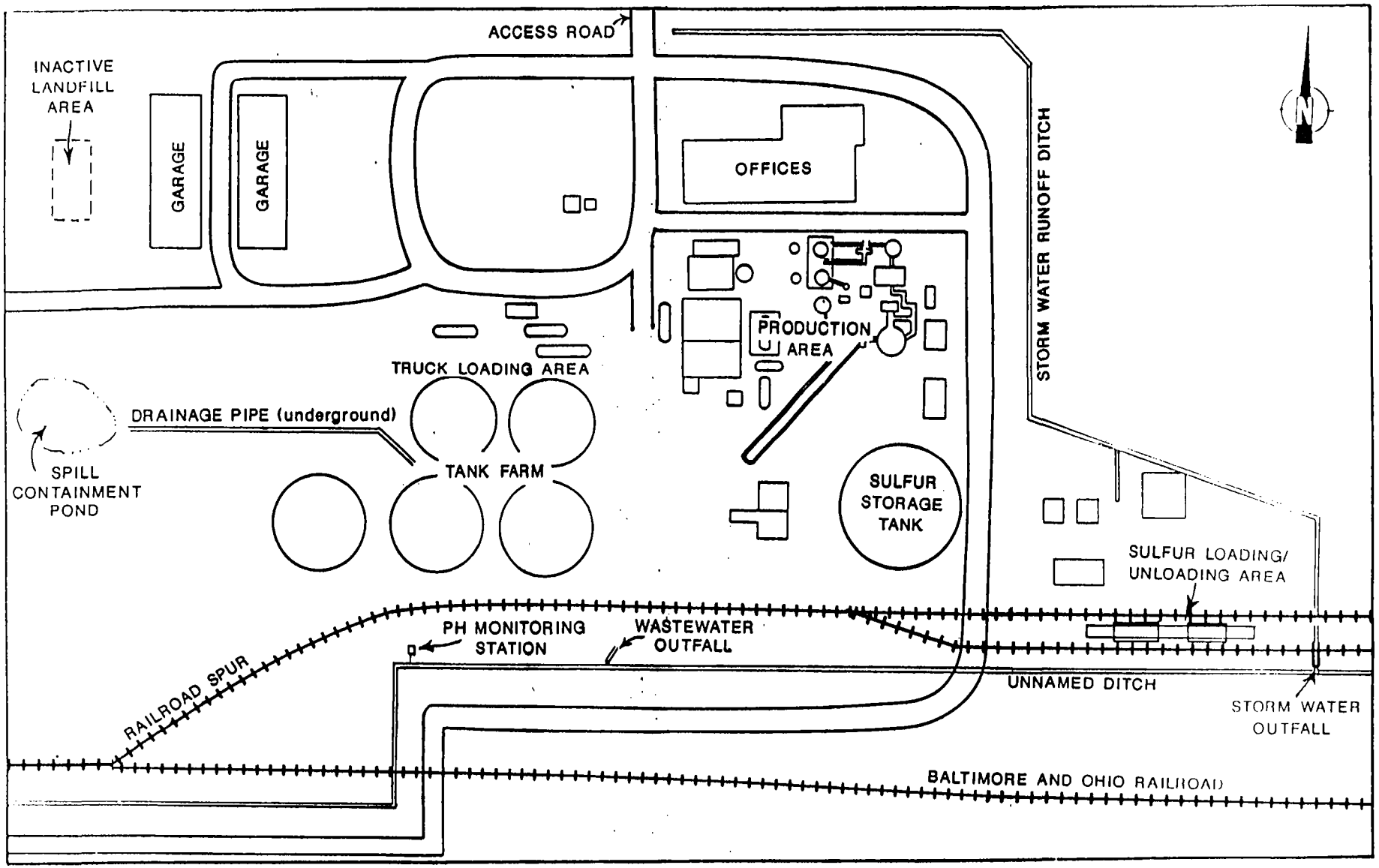


FIGURE 3-1 SITE FEATURES

inactive landfill. Two garages are located to the east of the landfill area.

Approximately 215 feet south of the spill containment pond, a spur of the B & O Railroad line splits off from the main tracks and extends northeast onto the site for approximately 180 feet before turning east and continuing for approximately 600 feet. A sulfur loading and unloading station is located at the end of the spur.

An unnamed ditch that originates off-site runs east-west across the southern portion of the DuPont site. The ditch is located just south of the sulfur loading and unloading area and approximately 40 feet south of the railroad spur. At a point approximately 150 feet east of the beginning of the railroad spur, the ditch turns toward the south for approximately 100 feet and flows underneath the main B & O Railroad track. The ditch then flows toward the west and empties into the Great Miami River approximately 3/8 miles west of the DuPont site. Another ditch is located in the northeast portion of the site. This ditch extends around the office building and production area and collects storm water runoff from those areas.

There are two outfalls that discharge into the unnamed ditch. One of the outfalls discharges storm water runoff collected from the area of the office building and production area in the northeast portion of the site to the unnamed ditch at a point approximately 15 feet east of the sulfur loading and unloading area. The other outfall, located approximately 425 feet to the west of the first, discharges wastewater that includes cooling water, boiler blowdown, and water softener backwash (Brinker 1985). This wastewater is collected from a series of underground sewers that drain the production, storage, and truck loading areas. A pH monitoring station is set up in the ditch approximately 125 feet west of the second outfall.

Three production wells are located in the southwest corner of the site. Production well #1 (PW1) is located approximately 80 feet west of the junction of the spur and the main railroad tracks and 20 feet north of the unnamed ditch. Production well #2 (PW2) is located approximately 50 feet southwest of PW1 and approximately 20 feet south of the unnamed ditch. Production well #3 (PW3) is located approximately 20 feet south of the unnamed ditch and approximately 100 feet west of PW2.

FIT photographs from the SSI of the DuPont site are provided in Appendix C.

3.4 SAMPLING PROCEDURES

Samples were collected by FIT at locations selected during the reconnaissance inspection to determine whether U.S. EPA Target Compound List (TCL) compounds or Target Analyte List (TAL) analytes were present at the site. The TCL and TAL are included with corresponding quantitation/detection limits in Appendix D.

On November 6, 1990, FIT collected nine soil/sediment samples, including one potential background soil sample, and three production well samples. Portions of the samples were offered to and accepted by the site representatives.

Soil/Sediment Sampling Procedures. Surface soil samples S2 and S3 were collected at depths of approximately 10 inches from the west and east sides of the inactive landfill, respectively (see Figure 3-2 for soil/sediment sampling locations). Subsurface soil sample S4 was collected at a depth of approximately 2 feet from the south side of the inactive landfill. These samples were collected to determine whether any TCL compounds or TAL analytes were migrating from the inactive landfill into on-site soils.

Soil sample S5 was collected at a depth of approximately 1 foot from the bottom of the spill containment pond. The pond was empty at the time of the SSI. This sample was collected in order to determine whether any TCL compounds or TAL analytes had spilled from the tank field or the truck loading area and were present in the soil at the bottom of the pond.

Soil sample S1 was collected from Shawnee Lookout County Park, located just north of the site on the north side of Brower Road (see Figure 3-3 for off-site soil sampling location). This sample was collected as a potential background sample from an area that appeared to be undisturbed in order to determine the chemical characteristics of the soil in the area.

Sediment samples S6 and S7 were collected at depths of approximately 6 inches from the unnamed ditch along the south side of the

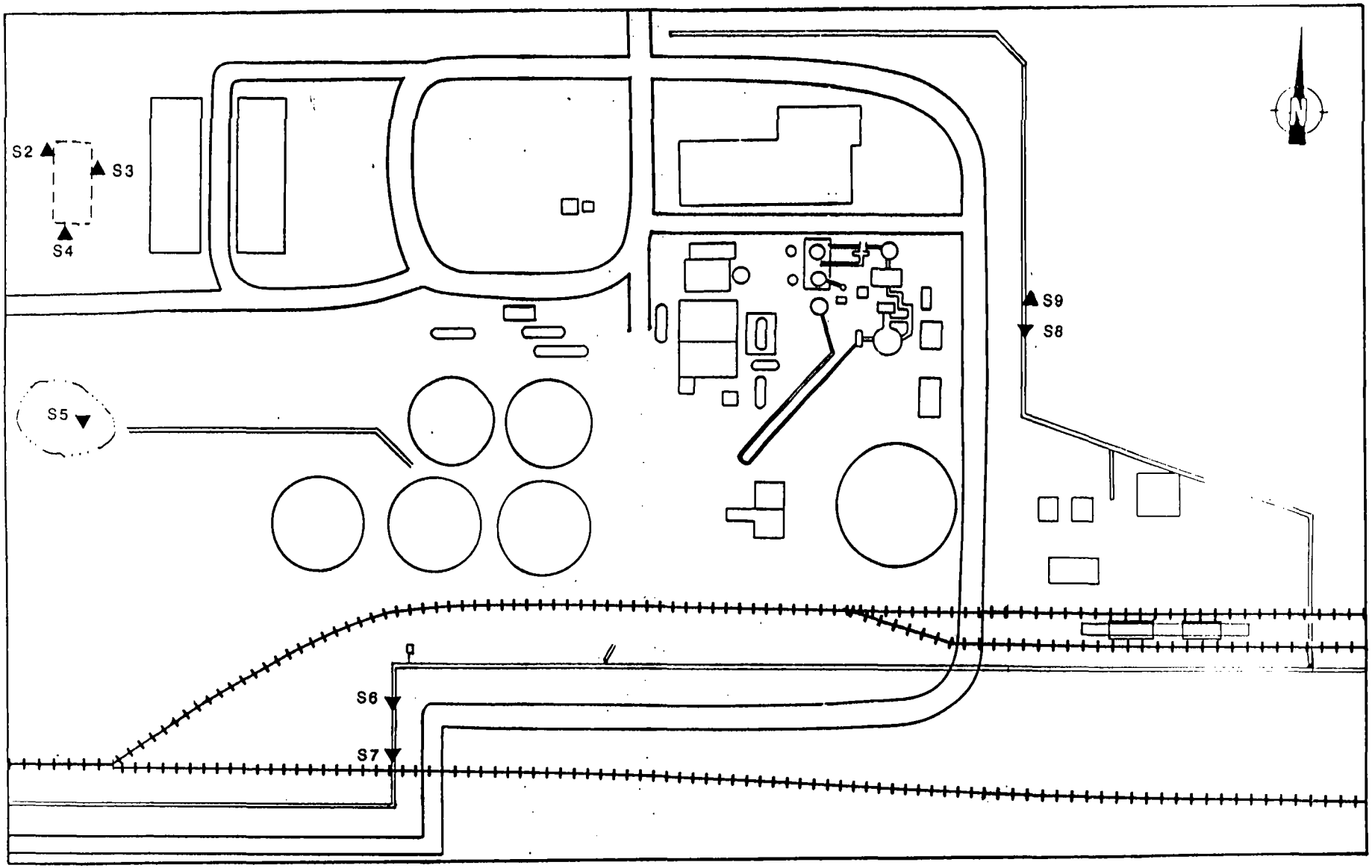
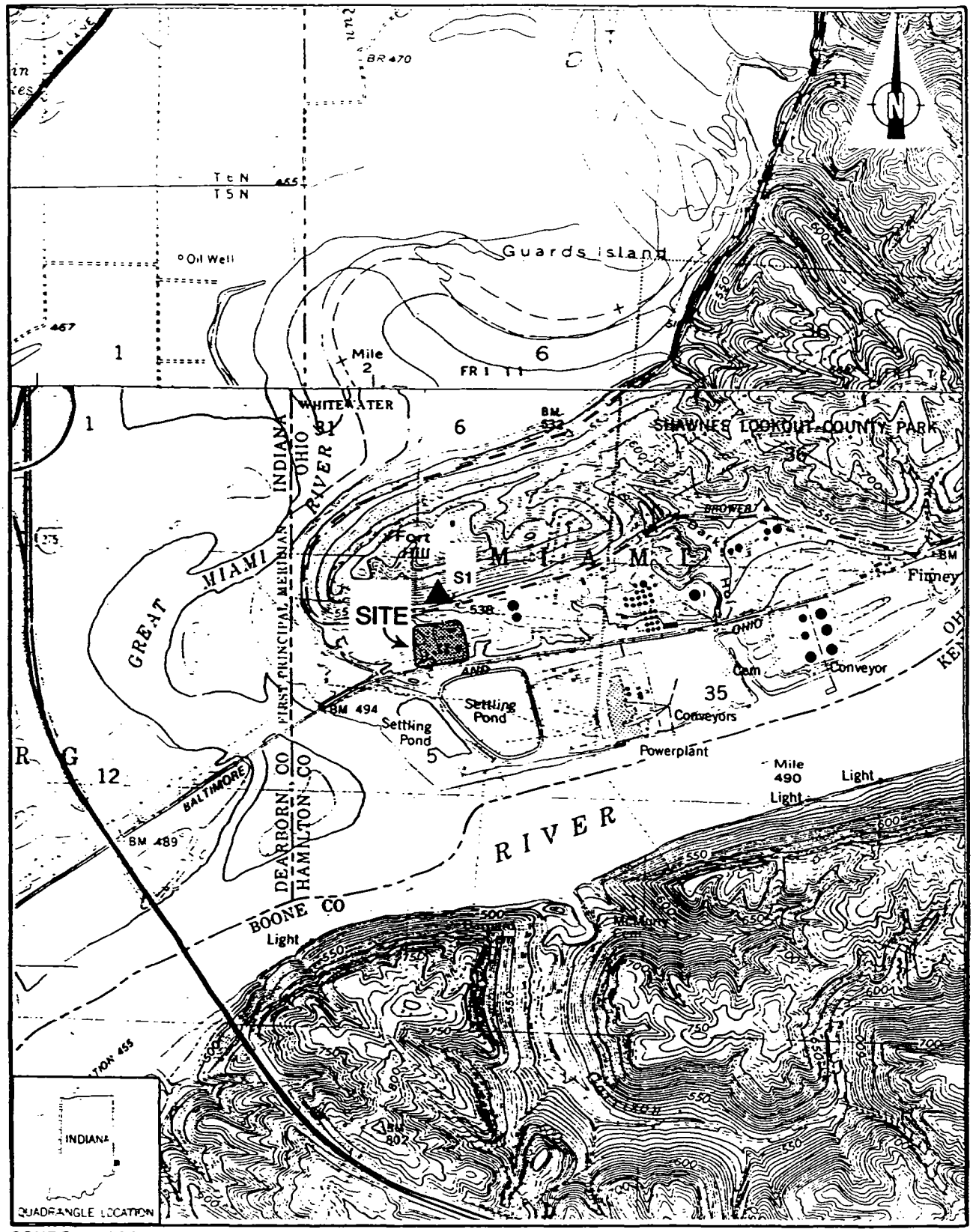


FIGURE 3-2 ON-SITE SOIL/SEDIMENT SAMPLING LOCATIONS



SOURCE: USGS, Lawrenceburg, IN-KY-OH Quadrangle, 7.5 Minute Series, 1981; Hooven, OH-IN-KY Quadrangle, 7.5 Minute Series, 1954, photorevised 1970.

SCALE
0 0.5 1 MILE

FIGURE 3-3 OFF-SITE SOIL SAMPLING LOCATION

site. These samples were collected to determine whether any TCL compounds or TAL analytes from the site were being released to the ditch.

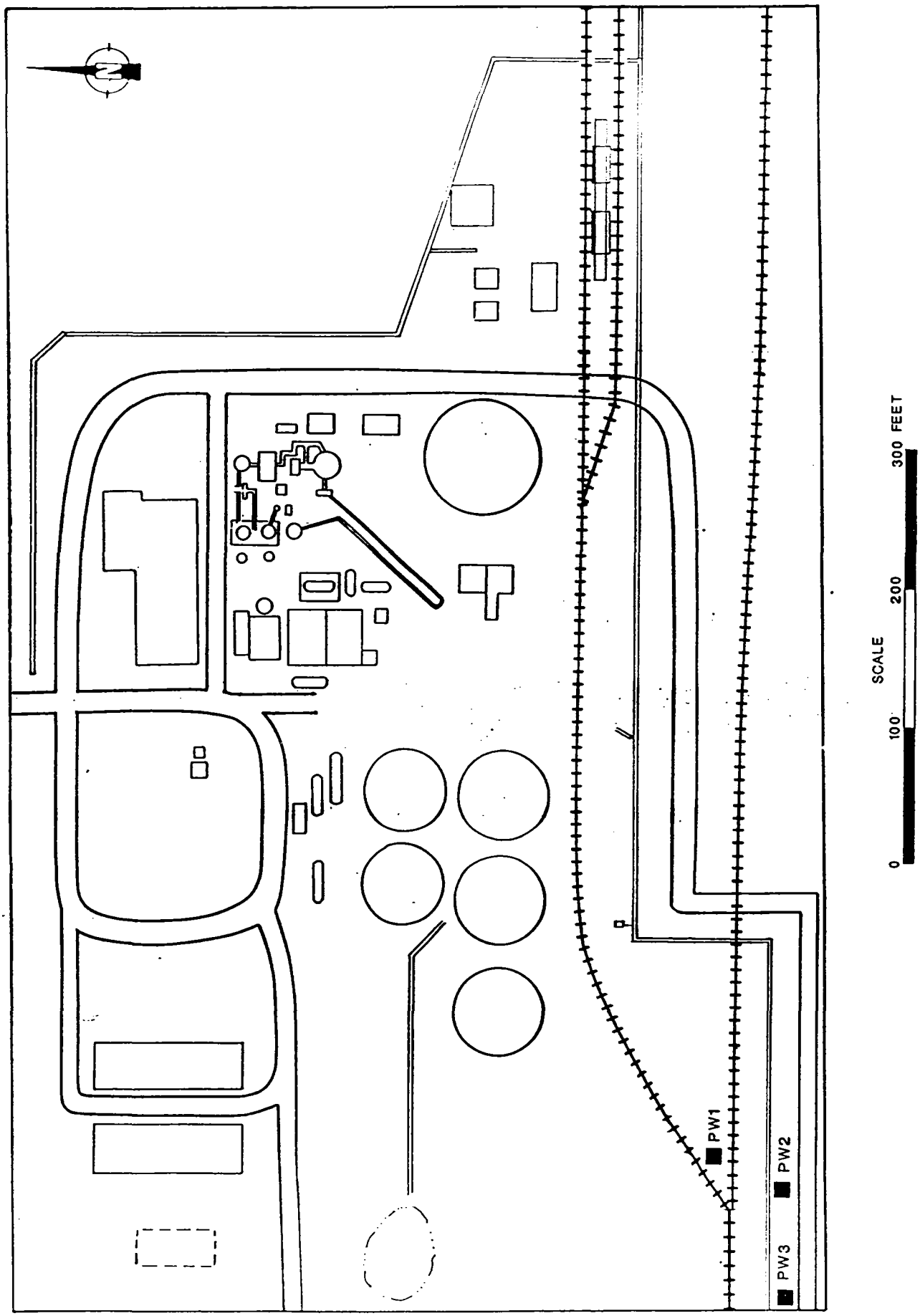
Sediment sample S8 was collected at a depth of approximately 6 inches from the storm water runoff ditch located on the east side of the site. Soil sample S9 was collected at a depth of approximately 10 inches from the soils along the west side of the storm water runoff ditch. These samples were collected to determine whether TCL compounds or TAL analytes from the site were being transported off-site by storm water runoff.

Stainless steel shovels, trowels, spoons, and bowls were used to collect each of the soil/sediment samples. The volatile organic analysis portions for each of these samples were collected first by transferring the sample material directly from the trowel into the appropriate sample bottle (E & E 1987). The sample material for the remaining portions of each sample was collected by first placing the soil in a bowl, removing debris, and then filling the appropriate sample bottles.

Standard E & E decontamination procedures were adhered to during the collection of all soil/sediment samples. These procedures included the scrubbing of all equipment (e.g., shovels, trowels, spoons, and bowls) with a solution of detergent (Alconox) and distilled water, and triple-rinsing the equipment with distilled water before the collection of each sample (E & E 1987). All soil/sediment samples were packaged and shipped in accordance with U.S. EPA-required procedures.

As directed by U.S. EPA, all soil/sediment samples were analyzed using the U.S. EPA Contract Laboratory Program (CLP).

Production Well Sampling Procedures. FIT also sampled three production wells located in the southwest corner of the site (see Figure 3-4 for production well sampling locations). The depth of the well from which sample PW1 was collected was approximately 75 feet, and the depths of the wells from which samples PW2 and PW3 were collected were both approximately 120 feet. These samples were collected in order to determine whether any TCL compounds or TAL analytes had migrated into the area groundwater. These samples were analyzed as drinking water samples because the groundwater beneath the site is part of the Great Miami Buried Valley aquifer, which is a federally designated sole source


PW1
PW2
PW3
SCALE
0
100
200
300 FEET

aquifer and the main source of drinking water for the surrounding communities.

All production well samples were obtained from outlets that by-passed water treatment systems and storage tanks, but that may have had copper fittings. Water was allowed to discharge from the outlets for 15 minutes before samples were collected to ensure that the sample sources had been purged of standing water (E & E 1987). In accordance with U.S. EPA quality assurance/quality control requirements, a duplicate production well sample and a field blank sample were collected. The field blank sample was prepared from distilled water. The duplicate sample was collected at location PW2.

As directed by U.S. EPA, all production well samples were analyzed using the U.S. EPA Central Regional Laboratory (CRL) of Chicago, Illinois.

4. ANALYTICAL RESULTS

This section presents results of the chemical analysis of FIT-collected soil/sediment and production well samples for TCL compounds and TAL analytes. All soil/sediment samples were analyzed for volatile organics, semivolatile organics, pesticides/polychlorinated biphenyls (PCBs), metals, and cyanides. All production well samples were analyzed for volatile organics, semivolatile organics, metals, and cyanides. The production well samples were not analyzed for pesticides/PCBs because of a laboratory error in the extraction procedure. Complete chemical analysis results of FIT-collected soil/sediment and production well samples are provided in Tables 4-1 and 4-2. In addition, tentatively identified compounds (TICs) detected in soil/sediment samples are also provided in Table 4-1.

Quantitation/detection limits used in the analysis of soil/sediment and production well samples are provided in Appendix D.

The analytical data for the chemical analysis of soil/sediment and production well samples collected for this SSI have been reviewed by U.S. EPA for compliance with terms of CLP, and the review has been approved by U.S. EPA. The analytical data have also been reviewed by FIT for validity and usability. Any additions, deletions, or changes to the data have been incorporated in the chemical analysis results tables presented in this section.

Table 4-2
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED PRODUCTION WELL SAMPLES

Sample Collection Information and Parameters	Sample Number PW1	PW2	Duplicate	PW3	Blank
Date	11/6/90	11/6/90	11/6/90	11/6/90	11/6/90
Time	1615	1755	1755	1800	1800
CRL Log Number	91FL30S89	91FL30S90	91FL30D90	91FL30S91	91FL03R87
Temperature (°C)	53	52	52	53.5	53
Specific Conductivity (μmhos/cm)	700	831	831	830	0
pH	7.3	7.61	7.61	7.22	7.04
Compound Detected (values in μg/L)					
Volatile Organics					
chloroform	—	—	—	—	1J
Semivolatile Organics					
di-n-butylphthalate	2	1J	1J	1J	—
Pesticides/PCBs*					
Analyte Detected (values in μg/L)					
arsenic	—	—	—	3	—
barium	152	110	111	228	—
calcium	102,000	120,000	119,000	82,700	—
copper	6.7	112	29.1	—	—
iron	265	—	—	1,000	—
lead	—	—	2	—	—
magnesium	27,300	31,400	31,500	24,300	—

Table 4-2 (Cont.)

Sample Collection Information and Parameters	Sample Number PW1	PW2	Duplicate	PW3	Blank
manganese	31.5	292	301	930	--
potassium	5,340	6,480	5,050	--	--
sodium	25,100	27,100	27,100	25,500	--

-- Not detected.

* Results are unusable due to an error in the extraction procedure.

COMPOUND QUALIFIER	DEFINITION	INTERPRETATION
J	Indicates an estimated value.	Compound value may be semiquantitative.

5. DISCUSSION OF MIGRATION PATHWAYS

5.1 INTRODUCTION

This section presents discussions of data and information pertaining to potential migration pathways and targets of TCL compounds and TAL analytes that are possibly attributable to the DuPont site.

The five migration pathways of concern discussed are groundwater, surface water, air, fire and explosion, and direct contact.

5.2 GROUNDWATER

Analysis of FIT-collected production well samples revealed the presence of the TAL analytes copper (112 µg/L in sample PW2) and manganese (930 µg/L in sample PW3). However, neither of these TAL analytes is conclusively attributable to the DuPont site based on the following reasons.

- The presence of copper may be a result of copper fittings in the spigot from which the sample was collected.

- The presence of manganese cannot be conclusively attributed to the DuPont site because no upgradient groundwater sample was collected for comparison.

Analysis of FIT-collected soil samples revealed the presence of TCL compounds and TAL analytes, including vanadium at a concentration of 336 mg/kg in sample S5. In addition, sulfur was identified as a TIC in sample S9 at a level above background.

The TAL analyte vanadium and the TIC sulfur are considered to be attributable to the DuPont site based on the following information.

- Vanadium was detected at a level above background in on-site soil sample S5, which was collected from the spill containment pond.

- Vanadium pentoxide is used as a catalyst on-site.

- Sulfur was detected as a TIC at a level above background in soil sample S9, which was collected from the bank of the storm water runoff ditch.

- Sulfur is used as a raw material for the production of sulfuric acid on-site.

A potential exists for TCL compounds and TAL analytes to migrate from the site to groundwater based on the following information. TCL compounds and TAL analytes were detected at concentrations above background in on-site soil samples.

The potential for TCL compounds and TAL analytes to migrate from the site to area groundwater is also based on the following geological information. In general the geology in the area of the DuPont site consists of alluvium containing unconsolidated sands, clays, and gravels, which extend to a bedrock of Ordovician-age Eden shale and limestone (Bownocker 1982). The DuPont site is located approximately 3/8 miles north-northeast of the junction of the Great Miami River and the Ohio River, and approximately 3/4 miles north-northeast of the Indiana-Ohio-Kentucky border. The Great Miami Buried Valley (Great Miami) aquifer, which is a federally designated sole source aquifer, is located beneath the DuPont site and is demarcated by the floodplain along the Great Miami River (see Appendix A). Groundwater in the Great Miami aquifer flows toward the south-southwest through sand and gravel and has a flow rate in excess of 1,000 gallons per minute (gpm) (Regional Council of Governments 1988).

Boring logs indicate that the geology beneath the DuPont site consists of alternating layers of clay and gravel, present from the surface to a depth of approximately 33 to 40 feet, over sand and gravel from the Great Miami aquifer, which is present at a depth of approximately 40 to 87 feet (see Appendix E for on-site soil boring logs). This sand and gravel is continuous to bedrock, which occurs at depths of 87 feet and deeper beneath the site. The nearest drinking water well is located on-site and draws from the Great Miami aquifer (see Appendix F for area well logs).

According to area well logs, the geology of the areas east and west of the Great Miami aquifer consists of unconsolidated topsoil over hard blue limestone. This bedrock is present at depths of 5 feet and deeper. The wells west of the Great Miami aquifer draw from the bedrock, which has a very low flow rate of approximately 3 gpm.

Residents within a 3-mile radius of the DuPont site obtain their drinking water from both private and municipal wells. All of the municipal wells and most of the private wells draw from the sand and gravel of the Great Miami Aquifer. However, a small number of private wells within the 3-mile radius of the site draw from the bedrock aquifer. Because there is no continuous clay layer present within a 3-mile radius of the site, these two aquifers are considered to be hydraulically connected and constitute the aquifer of concern (AOC). The depth to the AOC is considered to be approximately 40 feet, and the groundwater flow direction in the area is toward the south-southwest. The nearest municipal well field is located in Greendale, Indiana, which is approximately 1 6/10 miles west of the site.

The 3-mile radius of the DuPont site includes portions of three states--Ohio, Indiana, and Kentucky. In Hamilton County, Ohio, approximately 429 persons obtain drinking water from private wells located within the 3-mile radius of the DuPont site that draw from the AOC. This population was calculated by counting the number of houses located in Hamilton County, Ohio, on United States Geological Survey (USGS) topographic maps (USGS 1954, 1970) and multiplying this number by the persons-per-household value of 2.65 for Hamilton County, Ohio (U.S. Bureau of the Census 1982).

In Boone County, Kentucky, approximately 267 persons obtain drinking water from private wells located within the 3-mile radius of the DuPont site that draw from the AOC. This population was calculated by counting the number of houses located in Boone County within the 3-mile radius of the DuPont site on USGS topographic maps (USGS 1954, 1961) and multiplying this number by the persons-per-household value of 3.07 for Boone County, Kentucky (U.S. Bureau of the Census 1982).

In Dearborn County, Indiana, approximately 18,346 persons obtain drinking water from private and municipal wells within a 3-mile radius of the DuPont site that draw from the AOC. Approximately 882 persons obtain drinking water from private wells. This population was calculated by counting the number of houses located outside of the municipal water boundaries, but within the 3-mile radius of the DuPont site on USGS topographic maps (USGS 1954, 1961) and multiplying this number by the person-per-household value of 2.96 for Dearborn County, Indiana (U.S. Bureau of the Census 1982). The remaining 17,464 persons obtain drinking water from one of two municipal well fields that draw from the Great Miami aquifer within the 3-mile radius of the site (Horney 1990; Kimins 1990; Rupple 1991; Gaynor 1991).

The city of Lawrenceburg, Indiana, operates three municipal wells located approximately 2 8/10 miles southeast of the site. These wells are all set into sand and gravel and draw from the Great Miami aquifer at a depth of approximately 110 feet. According to Roland Horney, supervisor at the Lawrenceburg Utility Department, the three wells are currently serving approximately 5,328 persons, all of whom reside within the corporate boundaries of Lawrenceburg (Horney 1990).

The city of Greendale, Indiana, also operates three municipal wells that are located approximately 2 6/10 miles west of the DuPont site. These wells are also set into sand and gravel and draw from the Great Miami aquifer at a depth of approximately 80 feet. According to Niel Kimins, Chief Operator of the Greendale Water Department, these wells serve approximately 7,696 persons within the corporate boundaries of Greendale. The Greendale Water Department also sells water to the North Dearborn Water Corporation and the Hidden Valley Lake Utility (Kimins 1990). The North Dearborn Water Corporation serves approximately 2,368 persons in Guilford, Summit, and West Harrison with the water it

purchases from the Greendale Water Department (Rupple 1991). The Hidden Valley Lake Utility serves approximately 2,072 persons in unincorporated Lawrenceburg Township and parts of Miller Township with the water it purchases from the Greendale Water Department (Gaynor 1991).

The total target population for Ohio, Indiana, and Kentucky, located within a 3-mile radius of the DuPont site, that is potentially affected by the release of TCL compounds or TAL analytes from the site to groundwater is approximately 19,042 persons.

5.3 SURFACE WATER

No surface water samples were collected during the FIT SSI of the DuPont site; however, a potential does exist for TCL compounds and TAL analytes to migrate from the site to the Great Miami River through the unnamed ditch located south of the site. This potential is based on the following information.

- The TIC sulfur was detected at levels above background in sediment samples collected from the storm water runoff ditch.

- The storm water runoff ditch drains into an unnamed ditch located south of the site. This ditch is a tributary to the Great Miami River and releases into the river at a point approximately 3/16 miles west of the site.

- The Great Miami River joins with the Ohio River approximately 1/4 mile south of the point where the unnamed ditch enters the Great Miami River.

Because the surface water bodies potentially affected by the migration of TCL compounds and TAL analytes from the DuPont site are only used for recreational purposes within a 1-mile radius of the site, there is no surface water target population.

5.4 AIR

A release of TCL compounds or TAL analytes to the air was not documented during the SSI of the DuPont site. During the reconnaissance inspection, FIT site-entry instruments (OVA, hydrogen cyanide monitor, oxygen meter, and radiation monitor) did not detect levels that deviate from background concentrations at the site. In accordance with the U.S. EPA-approved work plan, further air monitoring was not conducted by FIT.

A potential does exist for TCL compounds and TAL analytes to migrate from the site via windblown particulates. This potential is based on the following information.

- The TCL compounds and TAL analytes were detected at levels above background in on-site soil samples.

- During the SSI, FIT observed a large, uncovered pile of raw sulfur, approximately 4 feet high and 6 feet in diameter.

- Waste from the vanadium pentoxide catalyst used at the facility is mainly in the form of vanadium pentoxide dust.

The population within a 4-mile radius of the site potentially affected by a release of TCL compounds and TAL analytes to the air is approximately 15,693. This population was calculated by counting houses within a 4-mile radius of the site in Dearborn County, Indiana; Hamilton County, Ohio; and Boone County, Kentucky, on USGS topographic maps (USGS 1954, 1961, 1961a, 1962, 1966, 1982) and multiplying this number by the persons-per-household values of 2.96 for Dearborn County, 2.65 for Hamilton County, and 3.07 for Boone County.

5.5 FIRE AND EXPLOSION

According to federal, state, and local file information reviewed by FIT, and an interview with Don Bennett, Safety Officer, Miami Township Fire Department, no documentation exists of an incident of fire or explosion at the site (Bennett 1990). According to FIT observations and site-entry equipment readings, no potential for fire or explosion existed at the site at the time of the SSI.

5.6 DIRECT CONTACT

According to federal, state, and local file information reviewed by FIT, observations made during the SSI, and the interview with the site representatives, no incidents of direct contact with TCL compounds or TAL analytes at the DuPont site have been documented. However, a potential does exist for workers and nearby residents to come into contact with TCL compounds or TAL analytes detected on-site. This potential is based on the following information.

- The TCL compounds and TAL analytes were detected in on-site soil/sediment samples at levels above background.

- The site is unfenced.

- There are approximately 24 workers at the DuPont facility that could potentially come into contact with the TIC sulfur.

The population within a 1-mile radius of the site potentially affected through direct contact with TCL compounds and TAL analytes at the site is 237 persons. This population was calculated by counting houses within a 1-mile radius of the site on USGS topographic maps (USGS 1954, 1961) and multiplying by the persons-per-household values of 2.96 for Dearborn County, 2.65 for Hamilton County, and 3.07 for Boone County (U.S. Bureau of the Census 1982).

6. REFERENCES

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Regional Council of Governments, March 1988, Ohio-Kentucky-Indiana, Petition for Sole Source Aquifer Designation of the Great Miami Buried Valley Aquifer System In Butler, Clermont, Hamilton and Warren Counties, Ohio.

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_____, February 12, 1988, Office of Solid Waste and Emergency Response, Pre-Remedial Strategy for Implementing SARA, Directive number 9345.2-01, Washington, D.C.

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Yust, Dale A., November 6, 1990, Maintenance Engineer, DuPont E.I. DeNemours, Fort Hill Plant, interview, conducted by Casey Lawal of E & E.

6698:8

APPENDIX A

SITE 4-MILE RADIUS MAP

SDMS US EPA Region V

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4-MILE RADIUS MAP

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APPENDIX B

U.S. EPA FORM 2070-13

SIGNATURE PAGE
FOR
SCREENING SITE INSPECTION REPORT
FOR
DUPONT E.I. DENEMOURS NORTH BEND
NORTH BEND, OHIO
U.S. EPA ID: OHD088656525
SS ID: NONE
TDD: F05-9009-010
PAN: FOH0736SA

Prepared by: Karen Sadler Date: 7/22/91
Karen Sadler
FIT Report Preparer
Ecology and Environment, Inc.

Reviewed by: Mary Tierney Date: 7/22/91
Mary Tierney
FIT Assistant Unit Manager
Ecology and Environment, Inc.

Approved by: Jerome D. Oskvarek Date: 7/22/91
Jerome D. Oskvarek
FIT Office Manager
Ecology and Environment, Inc.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION
01 STATE: OH | 02 SITE NUMBER: OHD088656525

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER					
Dupont E.I DeNemours & Co	11215 Brower Road					
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**	
North Bend	OH	45052	Hamilton	061	01	

09 COORDINATES: LATITUDE 39° 06' 55.0" | LONGITUDE 084° 48' 50.0"

10 TYPE OF OWNERSHIP (Check one): ■ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 11 / 06 / 90 (MONTH DAY YEAR)

02 SITE STATUS: ■ ACTIVE ☐ INACTIVE

03 YEARS OF OPERATION: 1956 (BEGINNING YEAR) | Till present (ENDING YEAR) ☐ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply):
☐ A. EPA ■ B. EPA CONTRACTOR E & E (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR (Name of firm) ☐ G. OTHER (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Casey Lawal	Geologist	E & E	(312) 663-9415
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Rod Hackler	Geologist	E & E	(312) 663-9415
Nazeer Uddin	Geologist	E & E	(312) 663-9415
Scott Zimmerman	Natural Resource Manager	E & E	(312) 663-9415
Mike Walters	Geographer	E & E	(312) 663-9415
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Christine Trmal	Geol Engr. & Hydrogeologist	Dupont Wilmington	(302) 366-4623
Tobin Lounsbury	Hydrogeologist	600 W Dutton's Mill Rd Aston PA. 19014	(215) 497-7014
Dale Yust	Maintenance	11215 Brower Road, N. Bend Ohio 45052	(513) 941-4121
Lownnie Wingate	Former DuPont Employee	Not Available	( ) Not Available
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
■ PERMISSION ☐ WARRANT	0945	Cold cloudy 49°F

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Mark A. LeLar	Ohio EPA SW District Office	(513) 285 6357

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Karen Sadler	EPA	E & E	(312) 663-9415	3 / 20 / 91 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
OH	OHD088656525

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [x] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS
- [x] D. OTHER (Specify) Vanadium dust

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS: Unknown
CUBIC YARDS: Unknown
NO. OF DRUMS: Unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- [x] A. TOXIC
- [x] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [x] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			Waste characteristics were identified through analysis of soil/sediment samples collected by FIT on November 6, 1990.
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	Unknown		
IOC	INORGANIC CHEMICALS			See Table 4-1 and 4-2 ant the Narrative
ACD	ACIDS	Unknown		
BAS	BASES	Unknown		
MES	HEAVY METALS	Unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	See Analytical Data tables 4-1 and 4-2 in narrative.				
	See Also Sec. 2.3				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	N/A		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Laboratory Analytical Data
FIT File info.
E+E site inspection November 6, 1990

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE: OH	02 SITE NUMBER: OHD088656525

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ■ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ~19,042 — 04 NARRATIVE DESCRIPTION

See Section 5.2 of Narrative

01 ■ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

See Section 5.3 of Narrative

01 ■ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ~15,693 — 04 NARRATIVE DESCRIPTION

See Section 5.4 of Narrative

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

See Section 5.5 of Narrative

01 ■ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 237 — 04 NARRATIVE DESCRIPTION

See Section 5.6 of Narrative

01 ■ F. CONTAMINATION OF SOIL — 02 ■ OBSERVED (DATE: 11/6/90) — ☐ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: ~20 (Acres) — 04 NARRATIVE DESCRIPTION

See Section 5.2 of Narrative

01 ■ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ~19,042 — 04 NARRATIVE DESCRIPTION

See Section 5.2 of Narrative

01 ■ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 24 — 04 NARRATIVE DESCRIPTION

See Section 5.6 of Narrative

01 ■ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ~19,042 — 04 NARRATIVE DESCRIPTION

See Section 5 of Narrative

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: OH | 02 SITE NUMBER: OHD088656525

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ■ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None reported or observed; however because TCL compounds and TAL analytes were detected on-site, on-site flora may be affected.

01 ■ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
None reported or observed. See J.

01 ■ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None reported or observed. See J.

01 ■ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ~19,042 — 04 NARRATIVE DESCRIPTION
The landfill is unlined; there is a pile of sulfur that are uncovered. The site is not completely fenced to prevent direct contact

01 ■ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Waste waters are released from site into an unnamed ditch which travels across off-site properties and then releases into the Great Miami River.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None reported or observed

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
None reported or observed

III. TOTAL POPULATION POTENTIALLY AFFECTED: ~19,042

IV. COMMENTS
The principal pathways by which TCL compounds or TAL analytes could migrate or potentially affect residents are groundwater, surface water, direct contact and air.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
Ecology and Environment FIT Files
Ecology and Environment site inspection log book.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
OH	OHD088565525

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
■ A. NPDES	1IE00000*AX	9/25/85	—	Two outflows in a ditch
☐ B. UIC				
■ C. AIR	143135081700 01	11/16/90	11/15/93	
☐ D. RCRA	None			
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
■ B. PILES	Unknown	Unknown
☐ C. DRUMS, ABOVE GROUND		
■ D. TANK, ABOVE GROUND	Unknown	Unknown
☐ E. TANK, BELOW GROUND		
■ F. LANDFILL	Unknown	Unknown
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCINERATION
- ☐ B. UNDERGROUND INJECTION
- ■ C. CHEMICAL/PHYSICAL (see comments below)
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER

■ A. BUILDINGS ON SITE

5

06 AREA OF SITE

~20 (Acres)

07 COMMENTS

The vanadium pentoxide catalyst is cleaned once a year. In this process, the catalyst is put in a large shaker which separates the reusable catalyst from the vanadium pentoxide dust and fines.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ■ C. INADEQUATE, POOR * ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

There are 5 very large, ~12,000 gallon sulfur storage tanks on-site. There are barriers around them and drainage ditches that lead to a spill pond.

* TCL compounds and TAL analytes were detected in on-site soil/sediment samples.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ■ YES ☐ NO

02 COMMENTS Site is not fenced

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Ecology & Environment Inc.

Ecology & Environment site inspection log book.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
OH	OHD088665525

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ■
NON-COMMUNITY	C. ☐	D. ■

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ■
D. ☐	E. ☐	F. ☐ Unknown

03 DISTANCE TO SITE

A. ~2.6 (mi)
B. On-Site (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

■ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER ~19,042

03 DISTANCE TO NEAREST DRINKING WATER WELL On-Site

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
~40 (ft)	Southwest	~40 (ft)	>1,000 GPM (gpd)	■ YES ☐ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

See Section 5.2 of Narrative in Appendix E

10 RECHARGE AREA		11 DISCHARGE AREA	
■ YES ☐ NO	COMMENTS: Rainwater	■ YES ☐ NO	COMMENTS: Great Miami and Ohio Rivers

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

■ A. RESERVOIR, RECREATION, DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Great Miami River	☐	~1/4 mi
Ohio River	☐	~3/8 mi
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. ~237 NO. OF PERSONS	B. ~1,102 NO. OF PERSONS	C. ~14,602 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

~.7/8 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

~136

04 DISTANCE TO NEAREST OFF-SITE BUILDING

~200 Ft. (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The DuPont site is located in a small industrial area approximately 3/8 of a mile North-Northeast of the junction of the Ohio and Great Miami Rivers. There are relatively few residence within a 2-mile radius of the site. There are two cities, Greendale and Lawrenceburg, IN within the 3-mile radius.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
OH	OHD088656525

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ■ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ■ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
~87 (ft)	Unknown (ft)	Unknown	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE		
		SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
40 (in)	2.5 (in)	<1 %	South	<1 %

09 FLOOD POTENTIAL

SITE IS IN 100 YEAR FLOODPLAIN

10

N/A ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. >3 (mi)	B. N/A (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

>3 (mi)

ENDANGERED SPECIES: N/A

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AGRICULTURAL LANDS AG LAND
A. On-Site (mi)	B. ~100 Ft (mi)	C. N/A (mi)	D. ~1/2 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

See Appendix A

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E & E File information and site inspection log book

USGS

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
OH	OHD088656525

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	3	CRL Laboratory Chicago, IL	data available
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	9	Associated Lab, Orange, CA 92668	data available
VEGETATION		Enviot, Ann Arbor, MI 48108	data available
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
OVA	No readings above background on-site
Combo Meter	20.5% O_2, 0% LEL on-site
Rad-Mini	No readings above background on-site
HCN Monitor	0ppm on-site

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Ecology and Environment, Inc. Chicago
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Ecology + Environment, Inc. Chicago

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

Ph, Conductivity, and temperature

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Laboratory analytical data

Ecology & Environment FIT Files and site inspection log books

EPA FORM 2070-13 (7-81)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
OH	OHD088656525

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Dupont E.I DeNemours & Co		11215 Brower Road		North Bend	OH	45052

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE
N/A						

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
West Minster Bronze	Unknown	Unknown	Unknown	Unknown		Unknown

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT File info. and site representative interview, November 6, 1990

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
OH	OHD088656525

II. CURRENT OPERATOR (Provide if different from owner)			OPERATOR'S PARENT COMPANY (If applicable)		
01 NAME: DuPont E.I DeNemours	02 D+B NUMBER: (303) 366-4623		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 11215 Browers Road	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY: North Bend	06 STATE: OH	07 ZIP CODE: 45052	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)			PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)		
01 NAME: West Minster Bronze	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT File info. and site representative interview, Nov. 6, 1990.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
OH	OHD088656525

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
E.I. DuPont De Nemours + Company, Inc. (303) 366-4623	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
11215 Browers Road	

05 CITY	06 STATE	07 ZIP CODE
North Bend	OH	45052

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
None Known			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S) (1990)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
RSI International	Unknown		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Unknown	Unknown		
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
Houston	TX / Unknown		
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT File information and site representative interview Nov. 6, 1990.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
OH	OHD088656525

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
OH	OHD088656525

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

N/A

III SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E&E FIT Files and site interview

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
OH	OHD088656525

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ■ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

None Known

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E & E Files

EPA FORM 2070-13 (7-81)

APPENDIX C

FIT SITE PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 1 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: F0H0736SA

DATE: 11/6/90

TIME: 1600

DIRECTION OF PHOTOGRAPH: North

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S1

DESCRIPTION: Soil Sample S1 location

DATE: 11/6/90

TIME: 1600

DIRECTION OF PHOTOGRAPH: North

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S1

DESCRIPTION: Perspective view of soil Sample S1 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont EI DeNemours & Co PAGE 2 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: FOH0736SA

DATE: 11/6/90

TIME: 1305

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S2

DESCRIPTION: Soil Sample S2 location

Photo did not develop

DATE: 11/6/90

TIME: 1305

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Cold / Cloudy 40°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S2

DESCRIPTION: Perspective view of soil sample S2 location

Photo did not develop

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 3 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: FOHO736SA

DATE: 11/6/90

TIME: 1310

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S3

DESCRIPTION: Soil Sample S3 location

DATE: 11/6/90

TIME: 1310

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S3

DESCRIPTION: Perspective view of Sample S3 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 4 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: F0H0736SA

DATE: 11/6/90

TIME: 1340

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S4

DESCRIPTION: Soil Sample S4 location

DATE: 11/6/90

TIME: 1340

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S4

DESCRIPTION: Perspective view of Sample S4 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 5 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: FOHO736SA

DATE: 11/6/90

TIME: 1415

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): 55

DESCRIPTION: Soil Sample 55 location

DATE: 11/6/90

TIME: 1415

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casy Lawal

SAMPLE ID (if applicable): 55

DESCRIPTION: Perspective view of Sample 55 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E.I. DeNemours & Co PAGE 6 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: F0H0736SA

DATE: 11/6/90

TIME: 1445

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S6

DESCRIPTION: Sediment Sample S6 location

DATE: 11/6/90

TIME: 1445

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S6

DESCRIPTION: Perspective view of sediment Sample S6 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E.I. DeNemours & Co PAGE 7 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: F0H0736SA

DATE: 11/6/90

TIME: 1500

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S7

DESCRIPTION: Sediment Sample S7 location

DATE: 11/6/90

TIME: 1500

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S7

DESCRIPTION: Perspective view of Sediment Sample S7 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 8 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: FOH0736SA

DATE: 11/6/90

TIME: 1540

DIRECTION OF PHOTOGRAPH: East

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S8

DESCRIPTION: Sediment Sample S8 location

DATE: 11/6/90

TIME: 1540

DIRECTION OF PHOTOGRAPH: East

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S8

DESCRIPTION: Perspective view of Sediment Sample S8 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 9 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: FOH0736SA

DATE: 11/6/90

TIME: 1545

DIRECTION OF PHOTOGRAPH: East

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S9

DESCRIPTION: Soil Sample S9 location

DATE: 11/6/90

TIME: 1545

DIRECTION OF PHOTOGRAPH: East

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): S9

DESCRIPTION: Perspective view of Soil Sample S9 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 10 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: FOH0736SA

DATE: 11/6/90

TIME: 1615

DIRECTION OF PHOTOGRAPH: Southwest.

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): PW1

DESCRIPTION: Production Well-1 Sample location

DATE: 11/6/90

TIME:

DIRECTION OF PHOTOGRAPH: Southwest

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): PW1

DESCRIPTION: Perspective view of Production Well-1 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 11 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: F0H0736SA

DATE: 11/6/90

TIME: 1755

DIRECTION OF PHOTOGRAPH: Southwest

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): PW1

DESCRIPTION: Production Well-2 Sample location

DATE: 11/6/90

TIME: 1755

DIRECTION OF PHOTOGRAPH: Southwest

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): PW1

DESCRIPTION: Perspective view of production well-2 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 12 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: F0H0736SA

DATE: 11/6/90

TIME: 1800

DIRECTION OF PHOTOGRAPH: South West

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): PW3

DESCRIPTION: Production well-3 sample location

DATE: 11/6/90

TIME: 1800

DIRECTION OF PHOTOGRAPH: Southwest

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): PW3

DESCRIPTION: Perspective view of Production well-3 location

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 13 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: F0H0736SA

DATE: 11/6/90

TIME: 1310

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): N/A

DESCRIPTION: Pile of raw Sulfur on top of the closed landfill

DATE: 11/6/90

TIME: 1310

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): N/A

DESCRIPTION: View of the landfill area with pile of Sulfur in the background

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 14 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: F0H0736SA

DATE: 11/6/90

TIME: 1400

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): N/A

DESCRIPTION: Acid production area

DATE: 11/6/90

TIME: 1400

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): N/A

DESCRIPTION: Storage tank area

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Dupont E. I. DeNemours & Co PAGE 15 OF 15

U.S. EPA ID: OHD088656525 TDD: F05-8707-106 PAN: F0H0736SA

DATE: 11/6/90

TIME: 1310

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cold Cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable): N/A

DESCRIPTION: View of the tank farm

DATE: 11/6/90

TIME: 1450

DIRECTION OF PHOTOGRAPH:

WEATHER CONDITIONS: Cold cloudy 49°F

PHOTOGRAPHED BY: Casey Lawal

SAMPLE ID (if applicable):

DESCRIPTION: Tank truck loading area

APPENDIX D

U.S. EPA TARGET COMPOUND LIST AND TARGET ANALYTE LIST QUANTITATION/DETECTION LIMITS

APPENDIX E

ON-SITE SOIL BORING LOGS

APPENDIX F

WELL LOGS OF THE AREA OF THE SITE